

bisexuales, ad 21 cm. longae. Flores ♀ pedicellati; calyce 4 mm. longo, lobis late ovatis. Flores ♂ pedicellati; staminibus 13--18. Capsula ca. 5 mm. longa.

Arborescent shrub, up to 2 m. high, with whitish scale-like stellate hairs. Branchlets slender. Stipules reniform, at first small and long-aristulate-cuspidate, becoming foliaceous. Petioles slender, up to 3.5 cm. long. Leaf-blades membranaceous, obscurely and minutely denticulate, appearing entire, lanceolate or ovate, 2 to 10 cm. long, 1.3 to 5 cm. wide, apex acuminate, acute or obtuse, base subcordate or rounded, green and very sparsely lepidote above, densely white lepidote beneath, base 5- or 7-nerved, costa and veins conspicuous beneath, slightly impressed above. Racemes very slender, terminal, bisexual, up to 21 cm. long. Pistillate flowers with pedicels about 2.5 mm. long, accrescent; calyx 4 mm. long, thin, sharply accrescent, 5-lobed to middle, the lobes broadly ovate, acutish, becoming rounded, ruffled with age; petal vestiges pilose; ovary white stellate-lepidote; styles branched 3 or 4 times. Staminate flowers with slender pedicels about 5 mm. long; calyx 3 mm. long, lobes ovate; petals linear, variable in number; perfect stamens 13 to 18, filaments pilose. Capsules about 5 mm. long.

Type in the University of Michigan Herbarium, C. L. Lundell and Amelia A. Lundell 7400, collected in second growth at kilometer 77, Merida-Chichen Itza road, Yucatan, Mexico, June 3, 1938. In low second growth bordering Sacred Cenote at Chichen Itza, Lundell and Lundell 7524, June 12, 1938.

Related to C. Watsonii Standl.

(a) Papers from the University of Michigan Herbarium.

NOVELTIES IN THE AVICENNIACEAE AND VERBENACEAE

Harold N. Moldenke

AVICENNIA BALANOPHORA Stapf & Moldenke ex Moldenke, Geogr.

Distrib. 34, nom. nud. (1939), sp. nov.

Arbor; ramulis gracillimis subteretibus dense griseo-farinaceis glabrescentibus; nodis annulatis articulatis; petiolis dense griseo-vel flavido-farinaceis; laminis firme chartaceis vel subcoriaceis lanceolatis vel anguste ellipticis acutis vel longe acuminatis vel caudatis integris, ad basin attenuatis vel longe acuminatis, supra obscure pulver-

ulentis vel glabris, subtus densissime incano- vel flavido-farinaceis; inflorescentiis axillaribus terminalibusque, capitatis solitariis vel geminatis; fructibus oblongis ad apicem et basin rotundatis, ad apicem apiculatis.

Small tree; branchlets and twigs very slender, subterete, densely grayish-farinaceous, becoming glabrous in age, obscurely or not at all lenticellate; nodes swollen, annulate, articulate; principal internodes 2.8--6.5 cm. long; leaves decussate-opposite; petioles rather slender, 0.8--2 cm. long, densely farinaceous with gray or yellowish hairs, flattened above, wrinkled longitudinally beneath in drying, slightly ampliate at base; blades firmly chartaceous or subcoriaceous, dark-green and rather shiny above, incanous or flavidous beneath, lanceolate or narrowly elliptic, 2.5--9.3 cm. long, 6--24 mm. wide, varying from acute (on young leaves) to long-acuminate or caudate (on mature leaves) at apex, entire, attenuate or long-acuminate into the petiole at base, very obscurely fine-pulverulent or glabrate above, very densely incanous- or yellowish-farinaceous beneath; midrib slender, slightly prominulous above and usually canaliculate to the apex or to $1/2$ or $3/4$ the distance from the base, rounded-prominulous beneath; secondaries very slender, ascending, slightly prominulous on both surfaces, arcuately joined in many loops at the margins, mostly obscure beneath; vein and veinlet reticulation sparse, the larger portions subprominulous on both surfaces, mostly obscure or hidden beneath; inflorescence axillary and terminal, the axillary ones solitary or paired, capitate, 1.4--5 cm. long, 5--19 mm. wide, several-flowered, the terminal one often 3-branched at apex and there conspicuously bracteate; bracts, when present, foliaceous, very narrowly elliptic, short-stipitate or sessile, 17--25 mm. long, 4--6 mm. wide, densely farinaceous with incanous or yellowish furf on both surfaces, acute at apex, attenuate or acuminate at base; fruiting-calyx practically unchanged, densely short-pubescent, its segments and the similar bractlets and prophylla mostly brown-margined, closely appressed to the base of the fruit; fruit oblong, 6--9 mm. long, 4--4.5 mm. wide, rounded at both ends, very densely puberulent with grayish-flavidous hairs, apiculate at (usually) the exact center above.

The type of this species was collected by Ferdinand von Mueller along the Brisbane River, Queensland, Australia, and is deposited in the herbarium of the Royal Botanic Gardens at Kew. It is known also from Keppels Islands, Queensland.

AVICENNIA ALBA var. LATIFOLIA Moldenke, Geogr. Distrib. 34, nom. nud. (1939), var. nov.

Haec varietas a forma typica speciei recedit laminis foliorum maturis late ellipticis usque ad 6.5 cm. latis.

This variety differs from the typical form of the species in its mature leaf-blades being broadly elliptic, to 6.5 cm. wide.

The type was collected by Noerkas (no. 58) on the Van Vuuren Expedition at Cape Wadjo on Celebes Island, and is deposited in the Rijksherbarium at Leiden.

AVICENNIA MARINA var. *ACUTISSIMA* Stapf & Moldenke ex Moldenke, Geogr. Distrib. 32, nom. nud. (1939), var. nov.

Haec varietas a forma typica speciei recedit laminis foliorum ad apicem argute acutis vel acuminatis; petiolis brevissimis; tomentis ramulorum pedunculorum albis.

This variety differs from the typical form of the species chiefly in its decidedly sharp-acute or acuminate leaf-apex. The branches, branchlets, twigs, peduncles, bractlets, prophylla, and fruits are also more plainly and regularly white-farinaceous. The petioles are very uniformly extremely short, 1--6 mm. long. The fruit is not beaked.

The type was collected by R. K. Ehde in the creek near Boriwle Station of the B. B. & C. I. R. R., Salsette Konkan, Bombay, India, on April 4, 1904, and is deposited in the herbarium of the Royal Botanic Gardens at Kew. The variety is known thus far only from Bombay and Sind.

AVICENNIA MARINA var. *ANOMALA* Moldenke, Geogr. Distrib. 35, nom. nud. (1939), var. nov.

Haec varietas a forma typica speciei recedit inflorescentiis attenuatis, floribus geminatis oppositis vel irregulariter dispositis.

This variety differs from the typical form of the species in its attenuate inflorescences with scattered or opposite pairs of flowers.

The type was collected by D. Henne and Carl Wilhelmi on Low Island, Tasmania, and is deposited in the Bernhardt Herbarium at the Botanisches Museum in Berlin.

BURROUGHSIA Moldenke, gen. nov.

Plantae suffrutescentes; caulibus sublignosis multiramosis brevibus; ramis numerosis gracilibus plerumque fasciculatis; foliis simplicibus oppositis vel ternatis sessilibus plerumque lanceolatis; inflorescentiis axillaribus spicatis vel capitatis; bracteolis ovatis vel ovato-lanceolatis distinctis acutis; calyce bipartito persistente; corolla hypocrateriformi, limbo bilabiato 5-partito; staminibus 4 didynamis; antheris ventralibus longe appendiculatis; stigmatibus obliquo discoideo.

Somewhat woody perennials or shrubby, much branched; stems short, somewhat ligneous, covered with a light-colored cracked cortex; branches numerous, slender, flexuous, ascen-

ding, often fascicled; leaves simple, opposite or ternate, sessile, small, usually lanceolate in outline, pinnatifid or crenate, often plicate and prominently veined beneath; inflorescence axillary, apicate or capitate; peduncles solitary, 2--4 times as long as the subtending leaves; heads hemispheric or oblong and few-flowered, or spikes oblong and dense; bractlets ovate or ovate-lanceolate, distinct, acute, ciliate, pubescent; calyx much exceeding the bractlets, 2-parted, persistent, united nearly to the top and truncate or minutely 2-toothed; corolla purplish or white, much exserted, hypocrateriform, its tube cylindric, its limb bilabiate, the upper lip 2-lobed, the lower 3-cleft, all the lobes crenate or crisped, the ventral lobe somewhat larger than the others; stamens 4, didynamous; filaments longer than the anthers, the ventral ones with slender erect appendages springing from the connective and exceeding the anthers in length; anther-cells somewhat separate and oblique; pistil very short; stigma strictly simple, oblique, disk-like; ovules one in each cell.

This remarkable genus of the Verbenaceae combines the 5-parted corollas and appendaged anthers of Verbena and the 2-cleft calyx and entire oblique stigmas of Lippia. It is named in honor of John Burroughs (April 13, 1837--March 29, 1921), distinguished American naturalist, philosopher, and writer. Type species, B. appendiculata.

BURROUGHESIA APPENDICULATA (Robinson & Greenm.) Moldenke,
Prelim. Alph. List Invalid Names 30, hyponym (1940),
comb. nov.

Lippia appendiculata Robinson & Greenm., Proc. Am. Acad.
29: 390. 1894.

BURROUGHESIA FASTIGIATA (T. S. Brandeg.) Moldenke, Suppl.
List Common Names 6, nom. nud. (1940); Prelim. Alph.
List Invalid Names 30, hyponym (1940), comb. nov.

Lippia fastigiata T. S. Brandeg., Proc. Calif. Acad.,
ser. 2, 2: 196. 1889.

CITHAREXYLUM AFFINE var. GLANDULIFERUM Moldenke, Geogr.
Distrib. 13, nom. nud. (1939), var. nov.

Haec varietas a forma typica speciei recedit laminis foliorum late ovatis, usque ad 12 cm. longis et 6.5 cm. latis, irregulariter arguto-dentatis, subtus puberulentibus et glanduliferis; glandulis paucis discoideis.

This variety differs from the typical form of the species in its broadly ovate leaf-blades, which are to 12 cm. long and 6.5 cm. wide, irregularly sharp-dentate along the margins when mature, puberulent throughout on the lower surface, and glandulose with several brown disk-like glands along the

midrib and at the base beneath. The sharply tetragonal and glabrous branches, branchlets, and twigs are many-striate and abundantly impressed glandular-punctate (!).

The type of this variety was collected by George B. Hitchon (no. 7344) in an oak woods at Yperricones, Tamascaltepec, México, México, on February 7, 1935, and is deposited in the herbarium of the Royal Botanic Gardens at Kew.

CITHAREXYLUM GHIESBREGHTII Moldenke, sp. nov.

Frutex; ramulis obtuse tetragonis sparse strigillosis vel glabratis nitidulis; petiolis gracilibus obscure sparsissimeque pulverulento-puberulis vel glabratis; laminis lanceolatis vel ellipticis attenuato-subacuminatis integris, ad basin acutis, utrinque glabratis vel sparse punctatis; inflorescentiis axillaribus confertis racemiformibus erectis vel nutantibus.

Shrub; branchlets slender, buff or brownish, rather shiny, striate in drying, obtusely tetragonal, sparsely strigillose or glabrate, somewhat ampliate at the nodes; nodes annulate, mostly oblique; principal internodes 5--6 cm. long; leaves decussate-opposite; petioles slender, 1.5--2.2 cm. long, obscurely and very sparsely pulverulent-puberulent or glabrate, not noticeably ampliate at base, flattened above, usually somewhat canaliculate-margined toward the apex; blades thin-chartaceous, rather uniformly dark-green on both surfaces, lanceolate or elliptic, 16--21 cm. long, 4.1--5.5 cm. wide, attenuate to a subacuminate point at the apex (or obtuse and emarginate on stunted leaves), entire, acute at base, glabrate and sparsely punctate on both surfaces; midrib slender, flattened above, prominent beneath; secondaries very slender, 10--13 per side, arcuate-ascending, flattened or subprominulous above, sharply prominulous beneath, not conspicuously anastomosing at the margins; vein and veinlet reticulation very abundant, prominulous throughout above, plane beneath; inflorescence axillary, usually crowded at the tips of the branchlets, racemiform, 9.5--22 cm. long, about 1 cm. wide throughout, densely many-flowered, erect or nutant; peduncles slender, to 4.5 cm. long, usually more abbreviated, sparsely strigillose or glabrate; pedicels very slender, about 1 mm. long, sparsely strigillose or glabrate, spreading; prophylla equaling the pedicels, sessile, sharp-pointed; calyx campanulate, about 2 mm. long and wide, glabrous except for the puberulent rim; corolla about 5 mm. long, its limb about 5 mm. in diameter.

The type of this species was collected by Auguste Boniface Ghiesbreght -- in whose honor it is named -- in the state of Oaxaca, México, in 1842, and is deposited in the herbarium of the Muséum National d'Histoire Naturelle at Paris.

CITHAREXYLUM HIDALGENSE Moldenke, Geogr. Distrib. 13, nom. nud. (1939), sp. nov.

Frutex vel arbor; ramis ramulisque obtuse tetragonis breviter hirsutis vel furfuraceis glabrescentibus; sarmentis gracilibus nigrescentibus sparse breviterque hirsutis; petiolis gracilibus hirsutis; foliis membranaceis oblongo-ellipticis vel subobovatis acutis vel breviter acuminatis integris vel ad apicem asymmetrico-angulatis, ad basin acutis vel subacuminatis glanduliferis, supra hirsuto-pubescentibus vel in senectute dense puberulis, subtus dense hirsutis; inflorescentiis axillaribus vel terminalibus nutantibus simplicibus multifloris.

Shrub or tree, to 7 m. tall; branches and branchlets medium, gray, obtusely tetragonal, short-hirsute or furfuraceous at the apex, soon becoming glabrescent, lenticellate; twigs slender, nigrescent in drying, sparsely short-hirsute; nodes obscurely annulate; principal internodes 1--3.5 cm. long; leaves decussate-opposite; leaf-scars large, borne on extremely large and massive, divergent-ascending, corky sterigmata to 5 mm. long; petioles slender, 1.5--3.3 cm. long, more or less hirsute; blades membranous, brunneous or nigrescent above in drying, lighter beneath, oblong-elliptic or elliptic to subobovate, 5.2--11 cm. long, 2--7.7 cm. wide, acute or short-acuminate at apex, asymmetrically angulate near the apex or entire, acute or subacuminate and often more or less asymmetrical at the base, usually bearing 1 or 2 black glands at the very base, shortly hirsute-pubescent above, becoming merely densely puberulent in age, densely hirsute (especially along the larger venation) beneath; midrib slender, not prominent on either surface; secondaries very slender, 5--8 pairs, arcuate-ascending, not prominent on either surface, conspicuous beneath only because of their more or less distichous pubescence; vein and veinlet reticulation obscure or indiscernible; racemes axillary or terminal, nutant, 8--16 cm. long, about 2 cm. wide in anthesis, simple, many-flowered; peduncles and rachis slender, more or less hirsute-pubescent, brown, the former 5--7 mm. long; pedicels filiform, about 2.5 mm. long, short-pubescent; bracts and bractlets none; prophylla linear-setaceous, about 1 mm. long; fruiting-calyx light, cupuliform, about 4 mm. long and 8 mm. wide, 5-ribbed, minutely puberulent or glabrescent, its rim shallowly 5-angulate or subentire; fruit oblong, about 10 mm. long and 7 mm. wide, fleshy, glabrous, shiny, wrinkled and blackening in drying.

The type of this species was collected by Cyrus Guernsey Pringle (no. 8969) below the Trinidad Iron Works, at an altitude of 5000 feet, Hidalgo, Mexico, on April 22, 1904, and is deposited in the Britton Herbarium at the New York Botanical Garden. It is closely related to C. Sessae D. Don and

is known also from Zacatecas, Veracruz, and Puebla.

CITHAREXYLUM MOCINI var. *LONGIBRACTEOLATUM* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit bracteolis elongatis linearibus vel spatulatis 4--25 mm. longis.

This variety differs from the typical form of the species in having the bractlets of its flowering racemes linear or narrowly spatulate, 4--10 mm. long, elongating in fruiting racemes to 25 mm. and then even more conspicuous, persistent.

The type of this variety was collected by Eizi Matuda (no. S.181) on Mount Pasitar, Chiapas, Mexico, on December 28, 1936, and is deposited in the Britton Herbarium at the New York Botanical Garden.

CITHAREXYLUM SHREVEI Moldenke, Geogr. Distrib. 14, nom. nud. (1939), sp. nov.

Frutex; ramis ramulisque gracilibus griseis subteretibus; sarmentis gracillimis obtuse tetragonis minute brevissimeque albido-puberulis; foliis oppositis; petiolis gracillimis vel obsolete; laminis chartaceis anguste oblongis vel ellipticis acutis vel obtusis integris revolutis, ad basin acutis vel subcuneatis, utrinque strigilloso-scabrellis.

Shrub; branches and branchlets slender, gray, subterete; twigs extremely slender and tenuous, white of very light gray, minutely puberulent with very short albidous hairs, obtusely tetragonal; nodes not annulate; principal internodes 0.4--2.5 cm. long; leaves decussate-opposite; petioles very slender and less than 1 mm. long or obsolete; blades chartaceous, gray-green on both surfaces, narrowly oblong or elliptic, 0.4 to 2.2 cm. long, 2.5--5.5 mm. wide, bluntly acute or obtuse at apex, entire and usually more or less revolute along the margins, acute or subcuneate at base, strigillose-roughened on both surfaces with minute albidous bulbous-based hairs; midrib very slender, very slightly prominent beneath; secondaries about 3 per side, very slender, usually indiscernible above and obscure beneath; vein and veinlet reticulation indiscernible; inflorescence and fruit not seen.

The type of this species was collected by Daniel Trembly MacDougal and Forrest Shreve (no. 59) at Picu Pass, Sonora, Mexico, on November 19, 1923, and is deposited in the United States National Herbarium at Washington. It is named in honor of my good friend, Dr. Forrest Shreve, of the Carnegie Institution's Desert Laboratory at Tucson, Arizona, who has contributed so much to our knowledge of the flora of the southwestern United States and Mexican deserts.

ALOYSIA BARBATA (T. S. Brandeg.) Moldenke, Prelim. Alph.

List Invalid Names 30 & 31, hyponym (1940), comb. nov.

Lippia barbata T. S. Brandeg., Proc. Calif. Acad. Sci., ser. 2, 2: 196. 1889.

CLERODENDRUM AFRICANUM Moldenke, sp. nov.

Frutex vel arbor; ramis ramulisque gracillimis submarginato-tetragonis glabris; foliis oppositis; petiolis glabris; laminis membranaceis anguste oblongo-ellipticis acutis, ad basin acutis vel attenuatis, utrinque pulverulentis vel glabris, subtus punctatis; inflorescentiis axillaribus; cymulis solitariis unifloris.

Tree or shrub; branches and branchlets very slender, brunnescent, submarginated-tetragonal, glabrous; leaves opposite; petioles 1--4 mm. long, brunnescent, glabrous; blades membranous, dark-green (nigrescent in drying) above, paler beneath, narrowly oblong-elliptic, 1.5--5.5 cm. long, 5.5--14 mm. wide, acute at apex, acute or attenuate at base, pulverulent or glabrous on both surfaces, punctate beneath; midrib very slender, flat or subimpressed above, flat or very slightly subprominulous beneath, nigrescent; secondaries few, very slender, 2--5 per side, irregularly arcuate-ascending, plainly anastomosing near the margins, obscure or subimpressed above, flat and nigrescent beneath; vein and veinlet reticulation indiscernible on either surface; inflorescence axillary; cymules single, opposite, about equaling the subtending leaves, 1-flowered; corolla purple.

The type of this species was collected by J. Wylie in the Greytown District, Natal, Union of South Africa, in December, 1932, and is deposited in the Natal Government Herbarium at Durban.

CLERODENDRUM LIGUSTRINUM var. NICARAGUENSE Moldenke, Alph.

List Common Names 16 & 28, nom. nud. (1939); Geogr.

Distrib. 16 & 37, nom. nud. (1939), var. nov.

Haec varietas a forma typica speciei recedit foliis et cymis axillaribus plerumque ternatis et laminis foliorum subtus constanter puberulentibus.

This variety differs from the typical form of the species in its leaves and axillary cymes being generally ternate and its leaf-blades being regularly puberulent beneath.

The type of this variety was collected by D. Chavez (no. 227) at Managua, Nicaragua, on July 26, 1926, and is deposited in the United States National Herbarium at Washington.

CLERODENDRUM PITTIERI Moldenke ex Standl., Field Mus. Publ.

Bot. 18: 1003, without Latin diag. (1938); Geogr. Dist-

rib. 15, 17, 19, 20, & 22, nom. nud. (1939), sp. nov.

Frutex vel fruticulus; ramis sarmentosis rigidis; ramulis

sarmentisque subgracilibus rigidis minute puberulis vel subglabrescentibus; internodiis abbreviatis; foliis oppositis vel ternatis; petiolis gracillimis 1--5 mm. longis pulverulento-puberulis vel glabratibus; laminis tenuiter chartaceis anguste ellipticis, ad apicem obtuse rotundatis, integris, ad basin acutis vel subcuneatis, utrinque glabris, subtus dense punctatis; inflorescentiis axillaribus, cymis abbreviatis 1--3-floris; pedunculis gracilibus minutissime puberulis; pedicellis subglabratibus.

Bush or shrub; branches twiggy, stiff; branchlets and twigs rather slender, light-gray, minutely puberulent with greatly appressed hairs, becoming subglabrate in age, the twigs often short, stiff, and sharp-pointed; nodes not annulate, marked with 2 or 3 aculeate leaf-scars; principal internodes much abbreviated, 3--30 mm. long; leaves decussate-opposite or ternate; petioles very slender, 1--5 mm. long, very obscurely pulverulent-puberulent or glabrate; blades thin-chartaceous, rather dark-green on both surfaces, narrowly elliptic, 6--24 mm. long, 3.5--10 mm. wide, rounded or obtuse at apex, entire, acute or subcuneate at base, glabrous on both surfaces but densely punctate beneath; midrib very slender, almost indiscernible or subimpressed above, prominulous beneath; secondaries very slender, 2--4 per side, indiscernible above, obscure beneath; vein and veinlet reticulation indiscernible; inflorescence axillary; cymes abbreviated, solitary, opposite, in the upper axils, 1--3-flowered, to 5.5 cm. long (including the mature flower), lax; peduncles slender, 8--14 mm. long, very minutely and obscurely puberulent with appressed hairs; pedicels slender, 5--8 mm. long, subglabrate; bracts and bractlets none; prophylla linear-subulate, few, 1--2 mm. long; calyx about 3 mm. long, minutely puberulent or glabrate, truncate; corolla white, about 2 cm. long, with a long and slender tube.

The type of this species was collected by Henri François Pittier de Fabrega (no. 4965) -- in whose honor it is named -- along the outskirts of the tidal belt and in savannas near sea-level at Aguadulce, Coclé, Panama, on December 5, 1911, and is deposited in the United States National Herbarium at Washington. The species is also known from Guatemala, Colombia, and Venezuela.

CLERODENDRUM SCHEFFLERI var. ELLIPTICUM Moldenke, var. nov.

Haec varietas a forma typica speciei recedit gracillimis sparse strigillosis; laminis tenuiter membranaceis late ellipticis acutis, ad basin acuminatis, utrinque sparsissime puberulento-strigillosis vel glabratibus.

This variety differs from the typical form of the species in the following characters: leaf-scars large, corky, elevated, with flaring margins; leaves opposite; petioles very

slender, 5--11 mm. long, sparsely strigillose; blades thin-membranous, darkgreen or brunnescenscent above, lighter beneath, broadly elliptic, 2.8--8 cm. long, 1.7--4.7 cm. wide, acute at apex, acuminate at base, very sparsely puberulent-strigillose or glabrate on both surfaces; calyx parted half way or farther.

The type of this variety was collected by Maurice Smethurst Evans (no. 544a) at Berea, Durban, Natal, Union of South Africa, in October, 1894, at an elevation of 5000--6000 feet, and is deposited in the Natal Government Herbarium at Durban. It is described as a bush with violet flowers.

CLERODENDRUM SUFFRUTICOSUM var. NATALENSE Moldenke, var. nov.

Haec varietas a forma typica speciei recedit foliis oppositis; laminis ellipticis vel subobovatis acuminatis vel subcaudatis, ad basin acuminatis, marginibus densiuscule irregulariterque inciso-dentatis (dentibus saepe incurvatis vel recurvatis), utrinque leviter adpresso-pubescentibus.

This variety differs from the typical form of the species in its leaves being opposite; petioles 3--7 mm. long, densely appressed-pubescent; blades membranous, elliptic or subobovate, dark-green above, lighter beneath, 2--4.5 cm. long, 1--2 cm. wide, acuminate at base and apex or subcaudate at apex, the margins rather deeply and irregularly incised with antrorse teeth which are often incurved or recurved at the tip, finely appressed-pubescent on both surfaces, more densely so beneath; calyx split half way to the base.

The type of this variety was collected by John Medley Wood (no. 657) at Inanda, Natal, Union of South Africa, in September, 1880, and is deposited in the Natal Government Herbarium at Durban. The collector states that four segments of the corolla are white and the fifth is violet. The variety is also known from Transvaal and Zululand.

GMELINA SPECIOSA Moldenke, sp. nov.

Arbor; ramulis gracilibus lenticellatis densissime puberulis; foliis oppositis; petiolis gracilibus densissime puberulis; laminis late ovatis vel deltoideis acutis vel breviter acuminatis integris, ad basin truncatis vel acutis vel breviter acuminatis, supra glabratis nitidulis, subtus densissime adpresso-puberulis; inflorescentiis terminalibus paniculatis; calyce glanduloso.

Tree, to 8 m. tall; branchlets slender, prominently lenticellate, very densely puberulent with yellowish-brown puberulence, becoming less conspicuously so in age; leaves decussate-opposite; petioles slender, 2--5 cm. long, very densely puberulent; blades broadly ovate or deltoid, dark-green above, gray beneath, 6--20 cm. long, 4.3--11.5 cm. wide, acute or short-acuminate at apex, entire, varying from trunc-

ate to abruptly acute or short-acuminate at base, glabrate and rather shiny above, extremely densely appressed-puberulent with gray puberulence beneath; inflorescence terminal, paniculate; flowers very large; calyx distinctly glandulose, the glands small, numerous, basal.

The type ofⁿ this species was collected by Benedict Balansa (no. 3806) in forests in the valley of Lankok, Mont-Bavi, Tonkin, French Indo-china, on June 24, 1887, and is deposited in the herbarium of the Royal Botanic Gardens at Kew.

GMELENA TONKINENSIS Moldenke, sp. nov.

Frutex subspinosis; ramulis gracillimis dense breviterque pubescentibus vel dense puberulis; foliis oppositis; petioliis gracillimis dense breviterque pubescentibus; laminis ovatis acutis vel breviter acuminatis integris, ad basin cordatis vel truncatis vel abrupte acutis, supra sparsissime strigilloso-pubescentibus glabrescentibus, subtus dense breviterque pubescentibus et puberulis; inflorescentiis terminalibus racemiformibus; calyce distincte glanduloso.

Somewhat spiny shrub; branchlets very slender, the younger parts densely short-pubescent with fulvous hairs, the older parts merely densely puberulent, sparsely but prominently lenticellate; leaves decussate-opposite; petioles very slender, 0.8--6 cm. long, densely short-pubescent with fulvous hairs like the young twigs; blades thin-chartaceous or membranous, ovate, 3.7--13 cm. long, 2.5--9.1 cm. wide, acute or short-acuminate at apex, entire, varying from cordate or truncate to abruptly acute at base, very sparsely strigillose-pubescent (especially along the larger venation) above, becoming glabrous, densely short-pubescent beneath over the lower puberulence; inflorescence terminal racemiform; calyx small, with distinctive large glands at its apex.

The type of this species was collected by Benedict Balansa (no. 3807) along the sides of the road leading from Tuchap to the rocks of Notre Dame, Tonkin, French Indo-china, in May or June, 1887, and is deposited in the herbarium of the Jardin Botanique Principal at Leningrad.

LANTANA FRUTILLA Moldenke, sp. nov.

Frutex; ramis griseis obtuse tetragonis sparsissime strigilloso-pubescentibus; ramulis sarmentisque pergracilibus elongatis brunneis sparse strigillosis; foliis oppositis; petiolis gracilibus sparse albido-strigillosis; laminis membranaceis ovatis acutis vel subacuminatis, ad basin rotundatis vel abrupte acuminatis, regulariter serratis, supra sparse strigillosis, subtus dense breviterque pubescentibus; inflorescentiis axillaribus; capitulis numerosis.

Shrub, to 1.5 m. tall; branches woody, gray, obtusely tetragonal, very sparsely strigillose-pubescent with scat-

tered white hairs; branchlets and twigs very slender, elongate, brownish, submargined on the obtuse angles, sparsely strigillose like the branches; leaves decussate-opposite; petioles slender, 3--5 mm. long, sparsely whitish-strigillose; blades membranous, bright-green above, somewhat lighter beneath, ovate, 1.8--6 cm. long, 1--3 cm. wide, acute or subacuminate at apex, rounded at base or abruptly acuminate and prolonged into the petiole, uniformly serrate from the widest part to the apex with rather appressed acute or bluntish teeth, sparsely strigillose above, densely short-pubescent beneath; inflorescence axillary; heads solitary in the axils and opposite, numerous, 1--2 cm. long, to 1 cm. wide, densely many-flowered; corolla-tube about 4 mm. long, its limb about 3 mm. in diameter.

The type of this species was collected by George B. Hinton (no. 6455) in I. R. F. Outzemala, at Pungarabato, Coyuca, Guerrero, Mexico, on August 17, 1934, and is deposited in the herbarium of the Royal Botanic Gardens at Kew. The species is also known from Michoacán, Morelos, Hidalgo, Chiapas, and the state of México.

LANTANA GROSSESERRATA Moldenke, sp. nov.

Frutex; ramulis acute tetragonis sparsiuscule adpresso-strigiosis; foliis oppositis; petiolis brevissimis substrigoso-pubescentibus; laminis chartaceis ellipticis ad basin et apicem acuminatis, supra mediam grosse serratis, supra sparsissime brevissimeque pilosulis, subtus dense rebinosopunctatis in venatio sparsissime brevissimeque pilosulis; inflorescentiis axillaribus longe pedunculatis capitatis; bracteolis perspicuis numerosis elongatis anguste ellipticis.

Straggling shrub, to 2.5 m. tall; branchlets slender, acutely tetragonal, rather sparsely or densely appressed-strigose with yellowish hairs; nodes rather obscurely annulate; principal internodes 5--9 cm. long; leaves decussate-opposite; petioles very much abbreviated, 5--7 mm. long, densely short-pubescent with substrigose hairs; blades chartaceous, slightly lighter beneath, elliptic, 7--12.5 cm. long, 2.8--4.8 cm. wide, attenuate-acuminate at base and apex, coarsely and rather irregularly serrate-dentate from about the middle to the apex with sharply acute broadly triangular and divergent teeth, very sparsely and minutely pilosulous above, densely resinous-punctate beneath and also very sparsely short-pilosulous on the venation beneath; midrib slender, prominulous above, prominent beneath; secondaries slender, 5 or 6 per side, arcuate-ascending, mostly plane above, prominent beneath, not plainly anastomosing; veinlet reticulation obscure or indiscernible above, plane and not very conspicuous beneath; inflorescence axillary,

long-pedunculate, capitate; peduncles slender, 6.5--7.5 cm. long, rather sparsely strigose; bractlets numerous, conspicuous, narrowly elliptic, elongate, 6--20 mm. long, 2--4 mm. wide, densely resinous-punctate, venose, appressed-strigillose on the venation, acute at apex; corolla white, its tube about 6 mm. long, its limb about 2 mm. wide; drupes black.

The type of this distinct species was collected by Alexander Frank Skutch (no. 4128) in a bushy clearing, at an altitude of 730 m., in the vicinity of El General, San José, Costa Rica, in February, 1939, and is deposited in the Britton Herbarium at the New York Botanical Garden.

LANTANA MEARNsii Moldenke, sp. nov.

Frutex; ramis gracilibus obtuse tetragonis densiuscule hirsutulo-pubescentibus, in senectute scabridis; foliis ternatis; petiolis plusminus marginatis dense breviterque subadpresso-pubescentibus; laminis lanceolatis vel ellipticis acutis regulariter crenatis, ad basin acutis vel acuminatis, supra dense puberulis scabris saepe bullatis, subtus densissime canescento-puberulis.

Shrub; stems slender, obtusely tetragonal, rather densely hirsutulous-pubescent, scabridous in age; branches similar, more slender, more densely hirsutulous-pubescent; nodes not annulate; principal internodes 1.5--7.5 cm. long; leaves ternate; petioles 3--8 cm. long, more or less margined, densely short-pubescent with mostly subappressed hairs; blades thin-chartaceous, dark-green above (brunnescent in drying), much lighter beneath, lanceolate or elliptic, 2.5--7.5 cm. long, 1.5--3.3 cm. wide, acute at apex, acute or acuminate at base, regularly crenulate with blunt antrorse teeth except at the very base, densely puberulent and scabrous above, often more or less bullate, very densely canescent-puberulent; midrib, secondaries, and veinlet reticulation impressed above, often deeply so, prominulous beneath; inflorescence spicate, subcapitate when young, later elongating, opposite or ternate, long-pedunculate; peduncles slender, 1.5--8.5 cm. long, densely puberulent; spikes 1.5--2 cm. wide, elongated to 1.5 cm. in age; outer bractlets large and foliaceous, broadly elliptic or ovate, 7--14 mm. long, 4--9 mm. wide, acute, entire, venose, densely puberulent; corolla about 1 cm. long, its limb about 5 mm. in diameter.

The type of this species was collected by Edgar Alexander Mearns on the Smithsonian Institution Expedition under the direction of Colonel Theodore Roosevelt in the vicinity of Fort Hall, at an altitude of about 1200 m., Kenya, between September 10 and 12, 1909, and is deposited in the Britton Herbarium at the New York Botanical Garden. The species has been widely confused in literature and herbaria with the South African *L. salvifolia* Jacq. and the tropical American

L. trifolia L., from both of which it is quite distinct.

LANTANA NOTHA Moldenke, sp. nov.

Frutex; ramulis dense albido-puberulis et plusminus dense albido-hirsutis inermibus vel minute sparsissimeque aculeolatis; petiolis pergracilibus dense puberulis et hirsutis; laminis chartaceis ovatis acutis grosse serratis, ad basin subtruncatis vel abrupte acutis, utrinque dense cinereo-pubescentibus; inflorescentiis axillaribus capitatis; bracteis lanceolatis vel oblongis dense cinereo-puberulis.

Shrub; branchlets slender, obtusely tetragonal, densely white-puberulent and also more or less densely white-hirsute with hairs 2 or 3 times as long, more densely so toward the apex and on younger parts, unarmed or armed with a very few minute prickles; nodes usually annulate with a band of dense or hirsute hairs; principal internodes 4--7.5 cm. long; leaves decussate-opposite; petioles very slender, 3--12 mm. long, very densely white-puberulent and hirsute; blades thin-chartaceous, uniformly gray-green on both surfaces, ovate, 1.6--5 cm. long, 1--2 cm. wide, acute at apex, coarsely serrate from base to apex with broadly triangular subacute teeth, subtruncate at base (or abruptly acute when immature), somewhat prolonged into the petiole at the middle, densely cinereous-pubescent on both surfaces, the hair sub-strigose above; midrib slender, subimpressed and more densely pubescent above, prominulous beneath; secondaries very slender, 4--6 per side, short, ascending, not much arcuate, subimpressed and not pubescent above, prominulous beneath; veinlet reticulation abundant, the larger portions subimpressed and not pubescent above and subprominulous beneath; inflorescence axillary, capitate, surpassing the subtending leaves; peduncles slender, 3--7 cm. long, grayish-puberulent and also more or less sparsely white-hirsute; heads 1.2--2.3 cm. wide, many-flowered; bractlets lanceolate or oblong, 5--6 mm. long, 1--2 mm. wide, blunt or subacute at apex, densely cinereous-puberulent; corolla-tube 7--8 mm. long, its limb about 5 mm. wide.

The type of this species was collected by Joseph Nelson Rose, Paul Carpenter Standley, and Paul George Russell (no. 13573) along the river in the vicinity of Fuerete, Sinaloa, Mexico, on March 27, 1910, and is deposited in the Britton Herbarium at the New York Botanical Garden.

LANTANA SCABRIFOLIA Moldenke, sp. nov.

Herba sublignosa; caulibus obtuse tetragonis, in juventute adpresso-strigosis, in senectute minute asperulis vel glebratis; foliis oppositis breviter petiolatis; laminis firme chartaceis ovatis obtusis regulariter crenulatis, ad basin rotundatis vel subtruncatis, supra scaberrimis, sub-

tus dense puberulis; inflorescentiis axillaribus longe pedunculatis; spicis subcapitatis oblongis dense multifloris valde bracteolatis.

Probably a rather woody herb; stems apparently not much branched or simple, obtusely tetragonal, at first densely appressed-strigose, later minutely asperulous, finally glabrate; nodes annulate; principal internodes 4.5--7 cm. long; leaves opposite, usually with several smaller ones on greatly abbreviated twigs in their axils; petioles very slender, 5--7 mm. long, sparsely puberulent and asperulous, canaliculate above; blades firmly thick-chartaceous, rather uniformly gray-green on both surfaces, ovate, 2--7.5 cm. long, 1.4--3.7 cm. wide, obtuse at apex, regularly crenulate from apex to base, rounded or subtruncate at base, very scabrous above, densely puberulent and slightly scabridous beneath; midrib, secondaries, and veinlet reticulation impressed above and prominent beneath; inflorescence axillary, paired in each axil near the tip of the stem; peduncles very slender, 2.5--4.5 cm. long, densely appressed-puberulent, ascending; spikes subcapitate, becoming oblong and to about 1 cm. long, 8--10 mm. wide, densely many-flowered; bractlets lanceolate-ovate, conspicuous, the lowermost ones to 6 mm. long and 2 mm. wide, long-attenuate to the apex, densely puberulent; flowers equaling or barely exceeding the bractlets; corolla-limb about 2 mm. in diameter.

The type of this species was collected by Edgar Alexander Mearns (no. 267) on the Smithsonian African Expedition under the direction of Colonel Theodore Roosevelt in the vicinity of Nairobi on the Uganda Railway, at an altitude of about 2000 m., Kenya, between May 26 and June 1, 1909, and is deposited in the Britton Herbarium at the New York Botanical Garden. The species has hitherto been confused with *L. salvifolia* Jacq., of South Africa, which has much smaller leaves and larger flowers.

LIPPIA CONTROVERSA Moldenke, sp. nov.

Frutex; ramulis gracilibus sparse hirsutis glabrescentibus; foliis crasse chartaceis ovatis vel ovato-ellipticis acutis vel breviter acuminatis regulariter serrulatis, ad basin rotundatis, supra bulboso-pilosis scaberrimis, subtus sparsissime hirsutis; inflorescentiis axillaribus, pedunculis solitariis vel geminatis simplicibus; capitulis valde bracteatis.

Shrub, to 2 m. tall; branchlets slender, stramineous, obtusely tetragonal, sparsely hirsute, becoming glabrate in age; nodes flattened, annulate; principal internodes 3--9 cm. long; leaves decussate-opposite; petioles rather stoutish, short, 5--10 mm. long, sparsely hirsute, more or less margined; blades thick-chartaceous, uniformly gray-green on

both surfaces, ovate or ovate-elliptic, 3.5--7 cm. long, 1.5--4.5 cm. wide, acute or short-acuminate at apex, regularly serrulate from base to apex, rounded at base and more or less attenuate into the petiole at the center, acute when immature, densely and harshly pilose above with bulbous-based hairs and very rough-scabrous, very sparsely hirsute or almost subglabrous beneath; midrib slender, plane or impressed above, prominent beneath; secondaries slender, 7 or 8 per side, arcuate-ascending, mostly impressed above, prominent beneath; veinlet reticulation abundant, mostly impressed above, plane or the larger portions subprominulous beneath; inflorescence axillary, simple, capitate; peduncles very slender, one or two from each of the upper leaf-axils, 2.5--4 cm. long, densely short-pubescent or puberulent with glandular hairs; heads 1.5--2.3 cm. wide; bracts very large and conspicuous, numerous, ovate, the lowermost about 10 mm. long and 6 mm. wide, acute, densely puberulent; corolla cream-colored or pale greenish-yellow.

The type of this species was collected by Paul Carpenter Standley (no. 58067) on a brushy slope near Las Lajas, Sacatepéquez, at an altitude of about 1200 m., Guatemala, on November 28, 1938, and is deposited in the Britton Herbarium at the New York Botanical Garden. The species is also known from Escuintla.

LIPPIA COSTARICENSIS Moldenke, sp. nov.

Arbor; ramulis acute tetragonis saepe submarginatis plusminus substrigoso-pilosis; foliis oppositis; petiolis brevibus plusminus adpresso-strigosis; laminis chartaceis anguste ellipticis serrulatis, ad basin et apicem attenuatis acutis vel acuminatis, supra minute strigillosis glabrescentibus, subtus minute puberulis; inflorescentiis axillaribus paniculatis.

Tree, to 18 m. tall; branchlets stoutish or rather slender, acutely tetragonal, often submarginated, more or less substrigose-pilose; nodes plainly annulate, often conspicuously so; principal internodes 2--4.5 cm. long; leaves decussate-opposite; petioles slender, 1--2 cm. long, usually short, more or less appressed-strigose; blades chartaceous, rather uniformly green on both surfaces, narrowly elliptic, 8--18 cm. long, 1.5--5 cm. wide, attenuate and acute or acuminate at base and apex, regularly serrulate from base to apex with very fine rounded and appressed teeth, often subrevolute along the margins, minutely strigillose above, glabrescent and merely punctate in age, minutely puberulent beneath, often only on the venation; midrib rather stout, plane above, prominent beneath; secondaries slender, 8--10 per side, plane above, prominent beneath; veinlet reticulation abundant, plane (often obscure) above, the larger portions

subprominulous beneath; inflorescence axillary, paniculate, with 1--3 whorls of capitate branches subtended by more or less foliaceous bracts; heads 5--10 mm. wide, conspicuously bracteolate; bractlets large, ovate, stramineous, the lowermost about 6 mm. long and 4 mm. wide, minutely puberulent; corolla yellow.

The type of this species was collected by Alexander Frank Skutch (no. 2292) at an altitude of 915 m., in the vicinity of El General, San José, Costa Rica, in December, 1935, and is deposited in the Britton Herbarium at the New York Botanical Garden. The species is also known from Alajuela.

LIPPIA CURTISIANA Moldenke, sp. nov.

Frutex; ramis ramulisque gracilibus dense breviterque pubescentibus, pilis sordidis; foliis oppositis vel ternatis; petiolis gracilibus brevibus dense breviterque pubescentibus; laminis chartaceis saepe falcatis ovatis acutis regulariter serrulatis, ad basin abrupte acutis, supra strigosis scabris bullatis, subtus breviter pubescentibus; inflorescentiis axillaribus capitatis simplicibus abbreviatis confertis; bracteolis maturis reniformibus venosis magnis densis.

Shrub; branches and branchlets slender, gray, obtusely tetragonal, densely short-pubescent with sordid appressed hairs, glabrescent in age; nodes not annulate; principal internodes 0.5--3 cm. long; leaves decussate-opposite or ternate; petioles slender, 4--7 mm. long, densely short-pubescent with appressed sordid hairs; blades chartaceous, often falcate and conduplicate in drying, rather uniformly grayish-green on both surfaces or slightly lighter beneath, ovate, 1.5--5.5 cm. long, 0.8--3.4 cm. wide, acute at apex, regularly serrulate with small blunt appressed or spreading teeth from almost the base to the apex and usually slightly revolute, abruptly acute or rounded at base, strigose and scabrous-bullate above, short-pubescent beneath (especially along the venation); midrib very slender, subimpressed above, prominulous beneath; secondaries very slender, 4--8 per side, ascending, not much arcuate, impressed above, prominulous beneath; vein and veinlet reticulation abundant, more or less impressed above and often subprominulous beneath; inflorescence axillary, capitate, simple, abbreviated; peduncles very slender, usually 3 per axil, 0.7--2 cm. long, densely appressed-pubescent with sordid-gray hairs; heads to 9 mm. wide in anthesis, to 13 mm. wide in fruit; bractlets ovate, the lowermost to 4 mm. long and 3 mm. wide, densely appressed-puberulent, in fruit greatly expanded and reniform, venose, to 9 mm. wide, stramineous.

The type of this species was collected by Edward Palmer (no. 479) at the city of Durango and vicinity, at an alti-

tude of 6207 feet, Durango, Mexico, between April and November, 1896, and is deposited in the Britton Herbarium at the New York Botanical Garden. The species is named in honor and grateful appreciation of Dr. Carleton Clarence Curtis, for many years professor of botany at Columbia University, author of valuable texts, inspiring teacher, and valued friend and adviser of hundreds of the present generation of American botanists, who will always honor and revere his memory.

LIPPIA DURANGENSIS Moldenke, sp. nov.

Fruticulus; ramulis gracilibus dense adpresso-pubescentibus; foliis oppositis vel ternatis vel quaternatis; petiolis gracillimis dense puberulis et resinoso-glandulosis; laminis tenuiter chartaceis ellipticis saepe subfalcatis acutis regulariter serratis, ad basin acutis vel acuminatis, supra scaberrimis, subtus densiuscule puberulis et resinoso-punctatis; inflorescentiis axillaribus capitatis confertis simplicibus.

Shrub; branchlets slender, obtusely tetragonal, brownish, densely appressed-pubescent; nodes annulate; principal internodes 3--7 cm. long; leaves opposite, ternate, or whorled in 4's; petioles very slender, 5--7 mm. long, densely puberulent and resinous-glandular, less so in age; blades thin-chartaceous, dark-green above, much lighter beneath, elliptic, often falcate and more or less conduplicate in pressing, 4--6 cm. long, 1.3--3 cm. wide, acute at apex, regularly serrate from almost the base to the apex with rather small rounded and often appressed teeth, acute or acuminate at base, very rough-scabrous above, rather densely puberulent and resinous-punctate beneath; midrib slender, plane or subimpressed above, prominulous beneath; secondaries very slender, 5--8 per side, arcuate-ascending, subimpressed above, prominulous beneath; veinlet reticulation abundant, subimpressed above, the larger portions prominulous beneath; inflorescence axillary, capitate, simple, crowded; peduncles very slender, 1--3.5 cm. long, 2--5 or more in each axil, more or less densely short-pubescent with substrigose whitish hairs, often also resinous-punctate; heads 6--9 mm. in diameter; bracts large and conspicuous, ovate, very plainly venose with a conspicuous reticulum, the lowest about 5 mm. long and wide, acute at apex, puberulent-margined; corolla greenish-yellow.

The type of this species was collected by Francis Whittier Pennell (no. 18189) on a rocky andesitic slope, at an altitude of 1900--2000 m., at Chupaderos, north of Durango, in the Sierra Madre Occidental, Durango, Mexico, on August 24, 1934, and is deposited in the United States National Herbarium at Washington. The beautifully venose bracts are quite characteristic.

LIPPIA INDICA Moldenke, sp. nov.

Herba perennis; caulibus ramulisque gracilibus obtuse tetragonis dense hirsutulis vel breviter pubescentibus vel incano-puberulentis; nodis annulatis; foliis oppositis; petiolis gracilibus albido-hirsutis; laminis chartaceis ovatis obtusis serratis, supra bullatis densiuscule strigosis, subtus dense tomentulosis; inflorescentiis axillaribus spicatis; spicis elongatis.

Perennial herb; stems and branches slender, obtusely tetragonal, densely hirsutulous or short-pubescent, becoming more sparsely so or merely puberulent in age, the hairs whitish; nodes annulate; leaves decussate, often with fascicles of small ones on greatly abbreviated twigs in their axils; petioles slender, 3--15 mm. long, very densely or sparsely hirsute with whitish hairs; blades chartaceous, gray-green, ovate, 0.8--7.5 cm. long, 0.6--3.5 cm. wide, obtuse at apex, regularly serrate from base to apex with extremely small and blunt somewhat appressed teeth, very bullate and rather densely strigose with appressed whitish hairs above, densely tomentulose beneath; inflorescence axillary, clustered toward the tips of the branches, spicate; spikes elongate, 2--5.5 cm. long, 1--3 in each upper axil, erect or ascending, the floriferous part 0.4--2.6 cm. long, uniformly 5--6 mm. wide throughout; peduncles very slender, 1.5--2.6 cm. long, densely short-pubescent or puberulent with whitish hairs, often binary.

The type of this species was collected by James Sykes Gamble (no. 17895) at Sigúe Ghát, at an altitude of 3000 feet, Nilgiri district, Madras, India, in August, 1886, and is deposited in the herbarium of the Royal Botanic Gardens at Kew. The species is also known from Coimbatore.

LIPPIA JALISCANA Moldenke, sp. nov.

Frutex vel arbor; ramis ramulisque gracilibus brunneis tetragonis breviter pilosis valde scabris; foliis oppositis; petiolis gracilibus brevibus breviter pilosis scabris; laminis coriaceis lanceolatis acutis regulariter serrulatis, ad basin acutis vel acuminatis, supra bullatis scaberrimis, subtus puberulis dense glanduloso-punctatis; inflorescentiis axillaribus paniculatis vel raro simplicibus capitatis.

Shrub or small tree; branches and branchlets slender, brown, tetragonal, shortly appressed-pilose, decidedly scabrous, especially on the margins; nodes annulate; principal internodes 1.5--6 cm. long; leaves decussate-opposite; petioles very slender, 4--17 mm. long, short-pilose and scabrous; blades coriaceous, rather uniformly green on both surfaces or slightly lighter beneath, lanceolate, 4--11 cm. long, 1.7--3.2 cm. wide, acute at apex, regularly serrulate from almost the base to the apex with blunt more or less ap-

pressed revolute teeth, acute or acuminate at base, bullate and very scabrous above, puberulent and densely glandular-punctate beneath; midrib slender, plane or subimpressed above, prominent beneath; secondaries very slender, 8--10 per side, arcuate-ascending, impressed above, sharply prominent beneath; vein and veinlet reticulation abundant, impressed above, sharply prominent beneath; inflorescence axillary, mostly paniculate with the heads borne in secondary umbels of 3--6, rarely a few simple ones included; peduncles very slender, 2--4 cm. long, densely short-pubescent with spreading brownish hairs; secondary peduncles 1--1.5 cm. long; heads 6--10 mm. wide in anthesis, densely many-flowered; bractlets ovate, about 3 mm. long and wide, sharply acute at apex, densely puberulent; corolla greenish-yellow, exceeding the bractlets.

The type of this species was collected by Ynes Mexia (no. 1636) in an oak-clad open forest on steep slopes on the trail from Real Alto to San Sebastian, at an altitude of 2000 m., in the Sierra Madre Occidental, Jalisco, Mexico, on February 3, 1927, and is deposited in the Britton Herbarium at the ^{New} York Botanical Garden.

LIPPIA TRANSEVALENSIS (Kuntze) Moldenke, comb. nov.

Camara salviaefolia β transvalensis Kuntze, Rev. Gen. Pl. 3, part 2: 250. 1898.

LIPPIA WHYTEI Moldenke, sp. nov.

Herba; ramis obtuse tetragonis brunneis dense breviterque pubescentibus vel puberulis; nodis valde annulatis; foliis oppositis breviter petiolatis; laminis lanceolatis acutis vel breviter acuminatis, ad basin acutis vel acuminatis, crenulatis, supra bullatis scaberrimis, subtus tomentellis; inflorescentiis axillaribus sessilibus vel subsessilibus geminatis; spicis subcapitatis dense multifloris.

Herb; stems and branches slender, obtusely tetragonal, brownish, the younger parts densely short-pubescent with sordid hairs, the older parts puberulent with minute brownish hairs; nodes plainly annulate; principal internodes 1.5--4.5 cm. long; leaves opposite; petioles 2--5 mm. long, alate-margined, sparsely short-pubescent; blades firmly chartaceous, dark-green above, lighter beneath, lanceolate or elliptic, 2.5--4 cm. long, 8--18 mm. wide, acute or short-acuminate at apex, regularly crenulate from base to apex, acute or acuminate at base, bullate and very scabrous above, densely tomentellous with sordid-grayish hairs beneath; midrib, secondaries, and veinlet reticulation deeply impressed above, only the larger portions (midrib and secondaries) prominulous beneath; inflorescence axillary, abundant toward the tips of the branches, a pair in each axil;

spikes sessile or subsessile, subcapitate, to about 12 mm. long and 10 mm. wide, very densely many-flowered; bractlets ovate, about 2 mm. long, sharply acute or short-acuminate, strigose with short sericeous hairs; flowers very small, hardly exceeding the bractlets.

The type of this species was collected by Alexander Whyte in northern Nyasaland, and is deposited in the Britton Herbarium at the ^New York Botanical Garden. It has hitherto been confused with Lantana salvifolia Jacq., of South Africa, with long-pedunculate heads and fleshy fruits.

PRIVA PEDICELLATA Moldenke, Geogr. Distrib. 32, nom. nud. (1939), sp. nov.

Herba; caulibus ramisque gracilibus argute tetragonis breviter pubescento-strigillosis vel puberulis; foliis oppositis; petiolis gracillimis sparsiuscule breviterque pubescento-strigillosis; laminis submembranaceis ovatis acutis vel obtusis serratis, ad basin subtruncatis vel subcordatis vel abrupte acutis, utrinque sparsiuscule strigillosis vel albido-strigosis; inflorescentiis terminalibus racemiformibus erectis laxe multifloris; pedicellis gracillimis elongatis.

Herb, to 5 dm. tall; stems and branches slender, sharply acute, shortly pubescent-strigillose, becoming sparsely so or merely puberulent in age, the older parts gray, the younger ones turning brown in drying; nodes annulate on young parts, indistinctly so or not annulate on older parts, not swollen; principal internodes 1.3--7.5 cm. long; leaves decussate-opposite; petioles very slender, 5--11 mm. long, rather sparsely short-pubescent or strigillose, flattened above, convex beneath, not noticeably ampliate at base; blades submembranous, rather uniformly bright-green on both surfaces or slightly lighter beneath, ovate, 2--3.8 cm. long, 1--2.5 cm. wide, acute or obtuse at apex (in outline), varying from subtruncate or subcordate to abruptly acute at base, usually somewhat prolonged into the apex of the petiole at the center, rather coarsely serrate from near the base to the apex with broad and acute antrorse teeth, rather sparsely strigillose or strigose with distant appressed non-bulbous hairs on both surfaces; midrib very slender, plane above, slightly subprominulous beneath; secondaries very slender, 3 or 4 per side, ascending, not much arcuate, plane on both surfaces, not conspicuously anastomosing; vein and veinlet reticulation very delicate, obscure or indiscernible above, plane beneath; inflorescence terminal, racemiform, 7--17 cm. long, 0.5--2 cm. wide in anthesis, loosely many-flowered, erect; peduncles (2.5--3.8 cm. long) and rachis exactly similar to the adjacent branches or stems in color, shape, texture, and pubescence; pedicels very slender, elon-

gate, 5--7 mm. long in anthesis, rather sparsely short-pubescent or puberulent; prophylla about 2 mm. long, lanceolate-ovate, attenuate-acuminate at apex, sessile, puberulent; fruit not seen.

The type of this remarkable species was collected by A. E. English somewhere in Burma and is deposited in the B. H. Lace Herbarium, purchased in 1918 by the Royal Botanic Garden at Edinburgh.

SPARTOTHAMNELLA TEUCRIIFLORA (F. Muell.) Moldenke, Geogr.

Distrib. 34, nom. nud. (1939); Prelim. Alph. List Invalid Name 40, hyponym (1940), comb. nov.

Spartothamnus teucriflorus F. Muell. in Wing, South. Sc. Record 2: 55. 1882.

STACHYTARPHETA FRANTZII var. *PATENTIFLORA* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit calycibus rhachidem non arcte adpressis et pilis ubique sparsioris.

This variety differs from the typical form of the species in having its rachis more slender and often slightly flexuous, the bractlets and calyxes not closely appressed to and sunken in the rachis, but more or less spreading before, during, and after anthesis, and the pubescence throughout (especially on the rachis, bractlets, and calyx) more sparse.

The type of this variety was collected by Adolfe Tonduz (no. 626) in broken ground near Guatemala City, Guatemala, at an altitude of 1400 m., in July, 1921, and is deposited in the Britton Herbarium at the New York Botanical Garden.

STACHYTARPHETA GUATEMALENSIS var. *LUNDELLIANA* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit ramulis foliisque spicisque plusminus adpresso-pilosis et laminis foliorum majoribus crassiore serratis.

This variety differs from the typical form of the species in having the branchlets, petioles, leaf-blades, peduncles, rachis, bractlets, and calyxes more or less appressed-pilose with very short and sparse whitish hairs, and in having the leaf-blades larger, to 8 cm. long and 4 cm. wide, more attenuate and sharply acute or subacuminate at apex, and much more coarsely serrate with broadly triangular and spreading sharply acute or apiculate teeth.

The type of this variety was collected by Eizi Matuda (no. 1762) at Finca Suarez, Chiapas, Mexico, on August 12, 1937, and is deposited in the Britton Herbarium at the New York Botanical Garden. It is named in honor of my esteemed friend and colleague, Dr. Cyrus Longworth Lundell of the University of Michigan, who is doing such important and note-

worthy work on the flora of Mexico and Central America.

STACHYTARPHETA HINTONI Moldenke, sp. nov.

Herba perennis (?); ramis gracilibus dense breviterque pubescentibus vel puberulis subglabrescentibus; foliis oppositis; petiolis gracilibus alatis dense vel sparse breviterque pubescentibus; laminis membranaceis ellipticis acutis vel acuminatis serratis, ad basin longiuscule acuminatis, utrinque sparse strigillosis; rhachide valde excavato pubescente vel puberulo.

Perennial herb (?); stems and branches slender, buff-colored, rather densely short-pubescent when young, becoming merely puberulent or even subglabrate in age; leaves decussate-opposite; petioles slender, 8--10 mm. long, alate-margined, densely or sparsely short-pubescent; blades membranous, very brittle and fragile in drying, elliptic, 5.5--9.5 cm. long, 3--5 cm. wide, acute or acuminate at apex, rather long-acuminate at base and prolonged into the petiole at the center, regularly or irregularly serrate (except on the basal and apical acuminations) with coarse acute antrorse somewhat divergent teeth, sparsely strigillose on the lamina above with short appressed antrorse whitish hairs, similarly strigillose on the venation beneath; inflorescence terminal, spicate, 12--27 cm. long, densely many-flowered, nutant before anthesis, erect in fruit, the flowers closely appressed and imbricate, sunken into the deeply excavated short-pubescent or puberulent rachis; bractlets lanceolate-ovate, 8--10 mm. long, to 2.5 mm. wide at base, sharply attenuate at apex, sparsely puberulent.

The type of this species was collected by George B. Hinton (no. 8236) -- in whose honor it is named -- in a shaded barranca at Luvianos, Temascaltepec, México, Mexico, on September 29, 1935, and is deposited in the herbarium of the Royal Botanic Gardens at Kew.

STACHYTARPHETA INCANA Moldenke, Prelim. Alph. List Invalid
Names 46, hyponym (1940), sp. nov.

Fruticulosus; ramulis gracilibus tetragonis dense incano-strigillosis; foliis oppositis sessilibus; laminis tenuiter chartaceis ovato-ellipticis vel ellipticis acutis vel subacuminatis argute serratis, ad basin longe caudatis, supra sparsiuscule strigillosis, subtus densissime puberulento-strigillosis vel subvelutinis; rhachide valde excavato densissime incano-strigilloso.

Shrubby; branchlets rather slender, gray-brown, rather plainly tetragonal, densely incanous-strigillose with very short antrorsely appressed hairs; nodes not distinctly annulate; principal internodes 1.5--5 cm. long; leaves decussate-opposite, regularly disposed to the base of the spikes,

sessile; blades very thin-chartaceous, dark-green on both surfaces, brunnescenscent in drying, ovate-elliptic or elliptic, 4.5--8.5 cm. long, 1.7--3.7 cm. wide, sharply acute or subacuminate at apex, long-caudate at base, sharply serrate with antrorse teeth except on the basal prolongation and at the very apex, rather sparsely strigillose above, very densely puberulent-strigillose beneath (subvelutinous on the larger venation); midrib slender, plane above, subprominulous beneath; secondaries slender, 3--5 per side, arcuate-ascending; spikes terminal, 17--19 cm. long, about 5 mm. wide throughout exclusive of the corollas; peduncles 10--12 mm. long, incanous-strigillose; rachis very densely incanous-strigillose, deeply excavated; bractlets broadly ovate, about 5 mm. long and 3 mm. wide at base, abruptly acuminate on the upper $\frac{1}{3}$, incanous-strigillose and ciliate, but not as densely strigillose as the rachis.

The type of this species was collected by Martin Sessé, José Mariano Mociño, Juan Diego del Castillo, and José Maldonado (no. 137) somewhere in Mexico between 1787 and 1804, and is deposited in the herbarium of the Jardín Botánico at Madrid. The species is known otherwise only from Guerrero.

STACHYTARPHETA INCANA var. ANGUSTIBRACTEATA Moldenke, Prelim. Alph. Lis Invalid Names 44, hyponym (1940), var. nov.

Haec varietas a forma typica speciei recedit spicis elongatis angustioribus et bracteolis lanceolatis, ad basim 1 mm. latis, ad apicem longissime acuminato-caudatis.

This variety differs from the typical form of the species in its somewhat more slender and more elongated spikes, which are 28--30 cm. long, and its lanceolate bractlets, only 1 mm. wide at base and very long-acuminate-caudate at the apex.

The type was collected by Sessé, Mociño, Castillo, & Maldonado (no. 136) somewhere in Mexico between 1787 and 1804, and is deposited in the herbarium of the Jardín Botánico at Madrid. The variety is otherwise known from San Luis Potosí, Nayarit, Sinaloa, Veracruz, and Oaxaca.

VERBENA LITORALIS var. ALBIFLORA Moldenke, var. nov.

Haec varietas a forma typica speciei recedit corollas albis.

This variety differs from the typical form of the species in its white corollas.

The type was collected by George B. Hinton (no. 13,965) in a llano at an altitude of 1000 m., Coalcoman, district of Coalcoman, Michoacán, Mexico, on July 20, 1939, and is deposited in the herbarium of the University of California at Los Angeles.